
Space Weather Forecast

Issued on Friday, 09 June 2023 at 13:28 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales <https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales>

Space Weather Forecast Headline: Chance of Moderate-class X-ray flares (R1-R2 radio blackouts). Slight chance of Minor Geomagnetic Storms.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: There are nine sunspot regions on the disc, with a region in the southeast quadrant the largest and most magnetically complex, but relatively inactive. Another notable region in the southwest is weakening sharply. The remaining regions are all mainly benign. Solar activity has been Low. No Earth-directed CMEs have been observed in available coronagraph imagery.

Solar Wind / Geomagnetic Activity: The solar wind speed was at ambient levels on a slightly declining trend. The total magnetic field strength was weak, with the north-south component near neutral. Resultant geomagnetic activity was Quiet.

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Mainly Low to Moderate solar activity is forecast, with no significantly active regions on the solar disc. A potentially stronger region is due to rotate onto the disc during the next two days although this is low confidence.

Solar Wind / Geomagnetic Activity: No Earth-directed CMEs are expected to affect the Earth, with a low risk of a glancing blow on 11 or 12 June. Fast solar winds may affect the Earth from 10 or 11 June, possibly giving speeds of 500km/s but with low confidence. Geomagnetic activity is forecast to be mainly Quiet, with a slight chance of Active or G1/Minor Storms on 10 or 11 June.

Energetic Particles / Solar Radiation: Solar radiation storms are not expected, however there is a very slight chance of reaching the S1/Minor Storm threshold should any larger X-ray flares occur.

Geomagnetic Storms:

Geo-Magnetic Storm	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Minor or Moderate	G1 to G2	No	5	20	20	10
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability			(%)	(%)	(%)	(%)
Active	R1-R2 M Class	No	30	30	30	30
Very Active	R3 to R5 X	No	5	5	5	5

Solar Radiation Storms - (High Energy Protons):

Radiation Storms	Level (cm ⁻² sr ⁻¹ s ⁻¹)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Active	≥ S1	No	5	10	10	10
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = cm⁻²sr⁻¹s⁻¹)